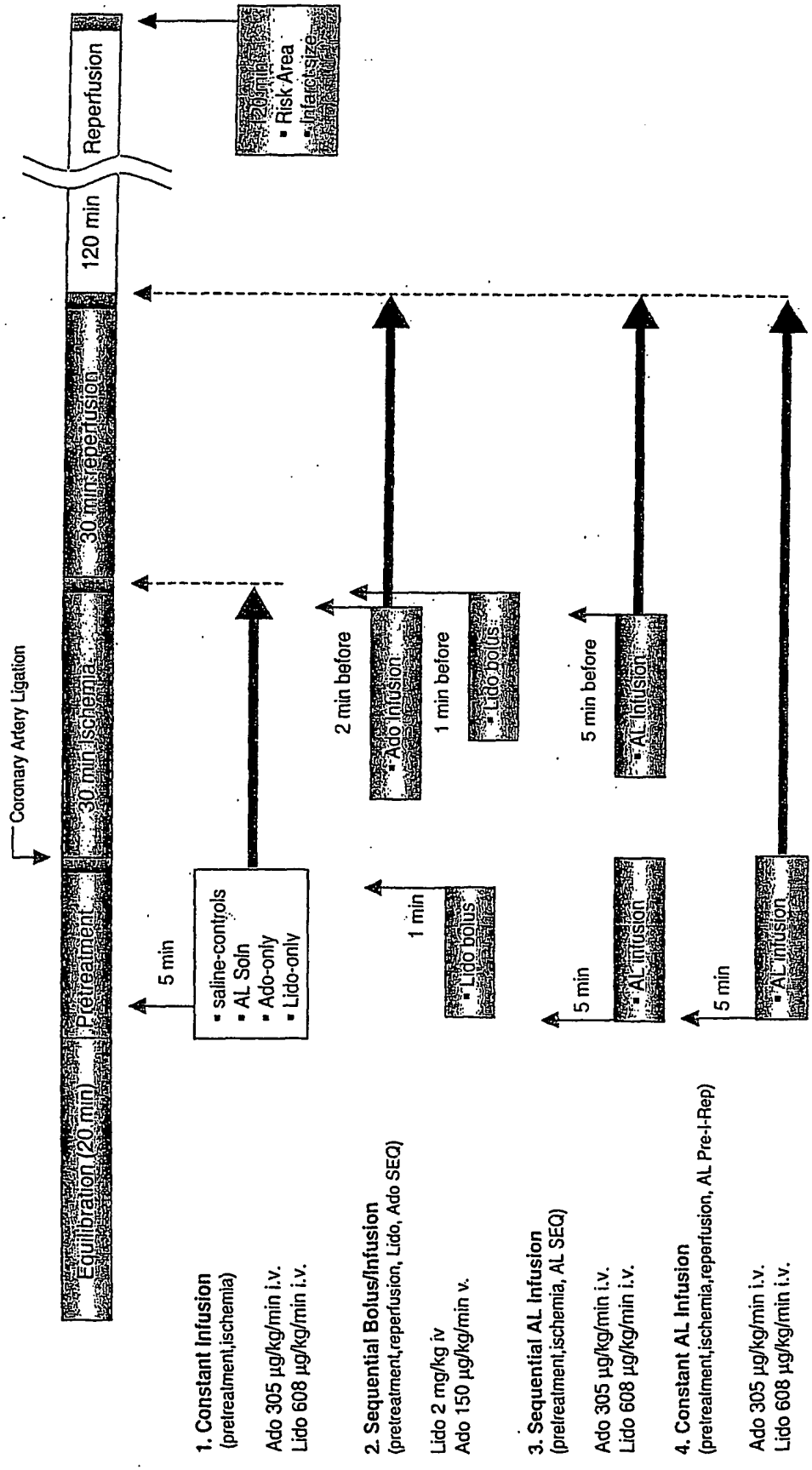

Equilibration (20 min)
Pretreatment
30 min Ischemia
30 min reperfusion
120 min
Reperfusion
Coronary Artery Ligation
20 min
▪ Risk Area
▪ Infarct size
5 min
▪ saline-controls
▪ AL Soln
▪ Ado-only
▪ Lido-only
1. Constant Infusion
(pretreatment,ischemia)
Ado 305 µg/kg/min i.v.
Lido 608 µg/kg/min i.v.
2 min before
▪ Ado Infusion
1 min before
▪ Lido bolus
1 min
▪ Lido bolus
2. Sequential Bolus/Infusion
(pretreatment,reperfusion, Lido, Ado SEQ)
Lido 2 mg/kg iv
Ado 150 µg/kg/min v.
5 min before
▪ AL Infusion
5 min
▪ AL Infusion
3. Sequential AL Infusion
(pretreatment,ischemia, AL SEQ)
Ado 305 µg/kg/min i.v.
Lido 608 µg/kg/min i.v.
5 min
▪ AL Infusion
4. Constant AL Infusion
(pretreatment,ischemia,reperfusion, AL Pre-I-Rep)
Ado 305 µg/kg/min i.v.
Lido 608 µg/kg/min i.v.

Figure 1

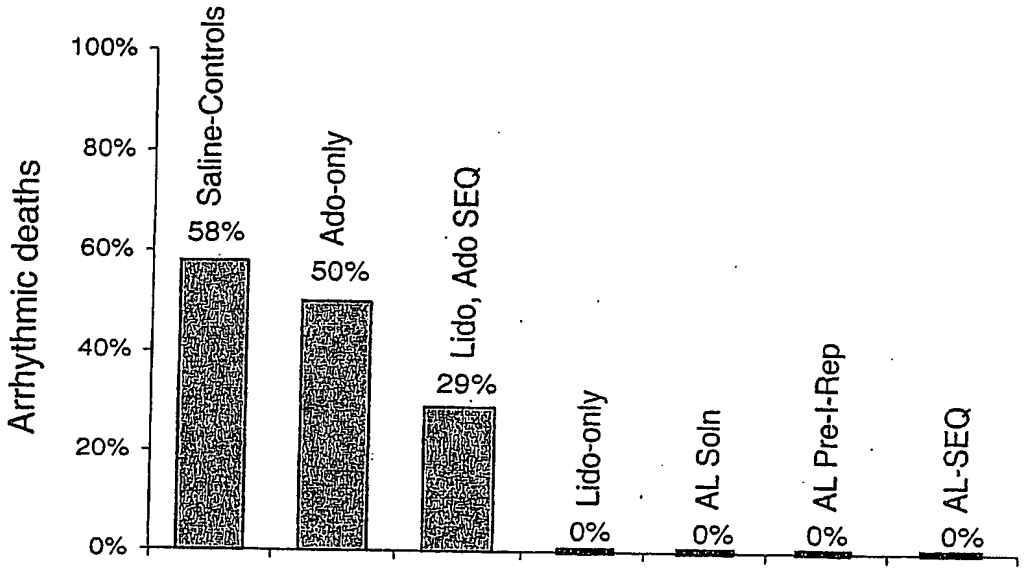

Arrhythmic deaths
100%
80%
60%
40%
20%
0%
Saline-Controls
58%
Ado-only
50%
Lido, Ado SEQ
29%
Lido-only
0%
AL Soln
0%
AL Pre-I-Rep
0%
AL-SEQ
0%

Figure 2

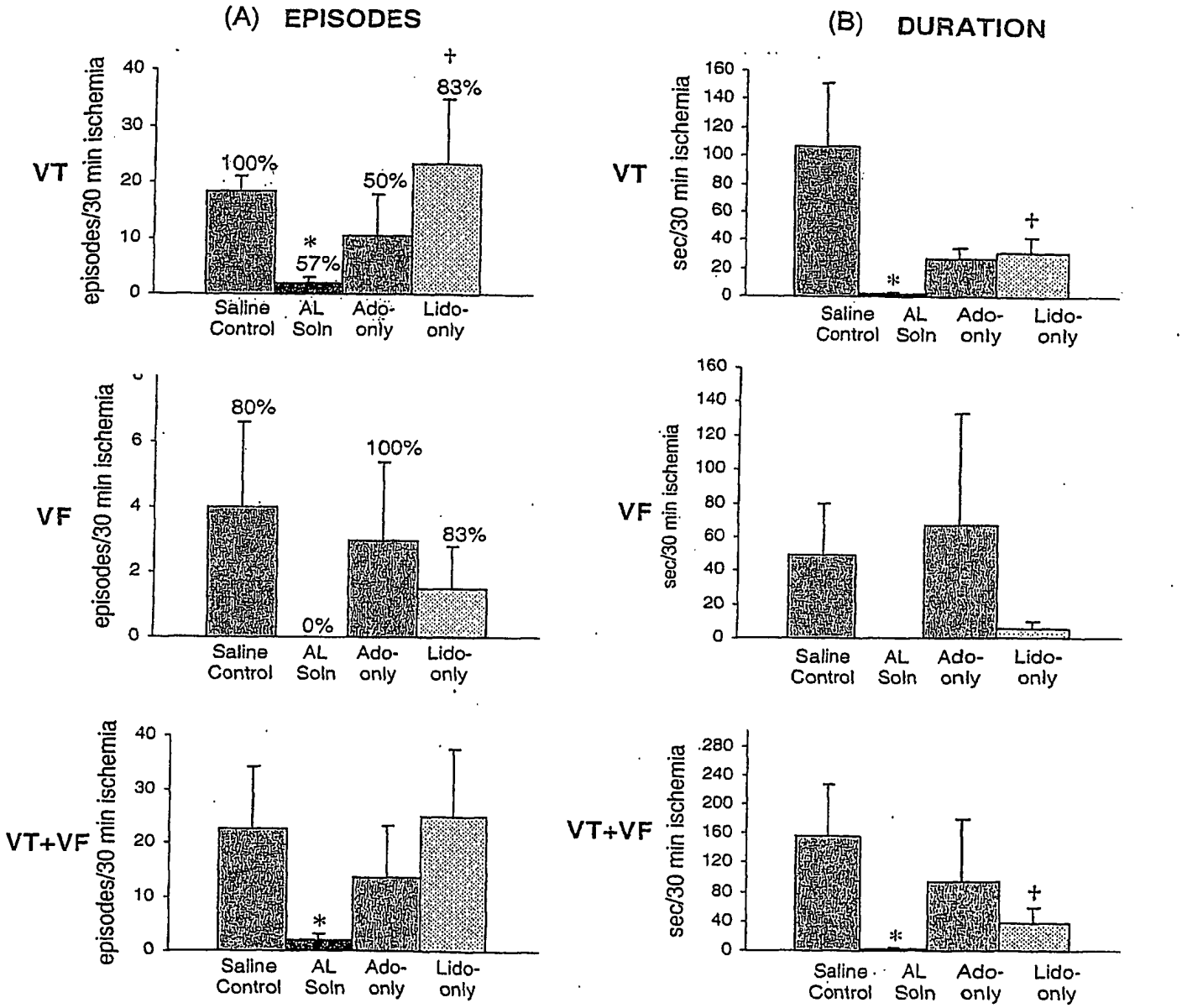
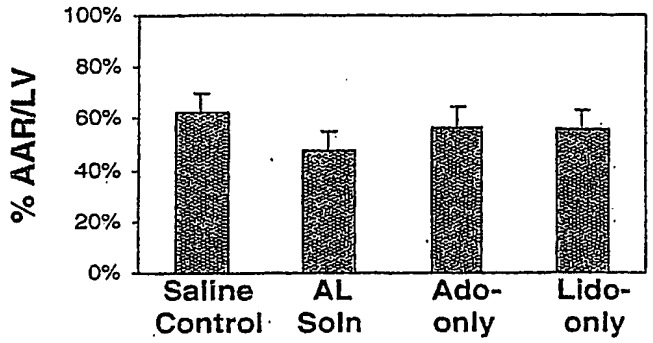
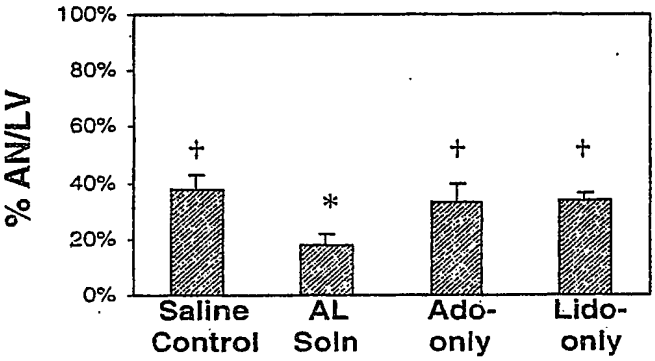

(A) EPISODES
(B) DURATION
VT
VF
VT+VF
episodes/30 min ischemia
sec/30 min ischemia
100%
57%
50%
83%
80%
0%
100%
83%
*
†
Saline Control
AL Soln
Ado-only
Lido-only

Figure 3

(A)


% AAR/LV
100%
80%
60%
40%
20%
0%
Saline Control
AL Soln
Ado-only
Lido-only

(B)


% AN/LV
100%
80%
60%
40%
20%
0%
†
*
†
†
Saline Control
AL Soln
Ado-only
Lido-only

(C)

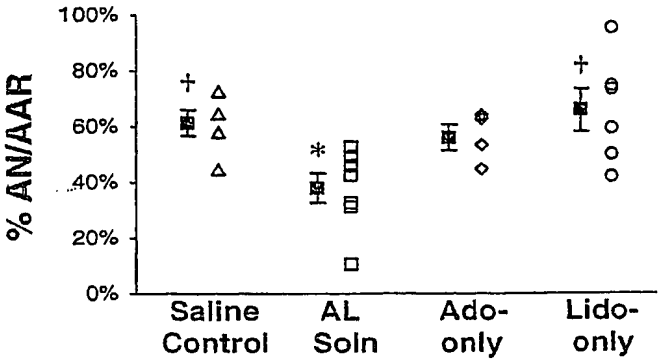
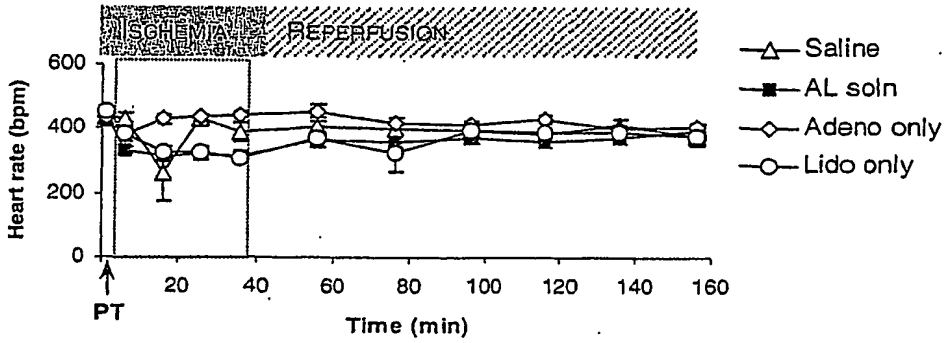
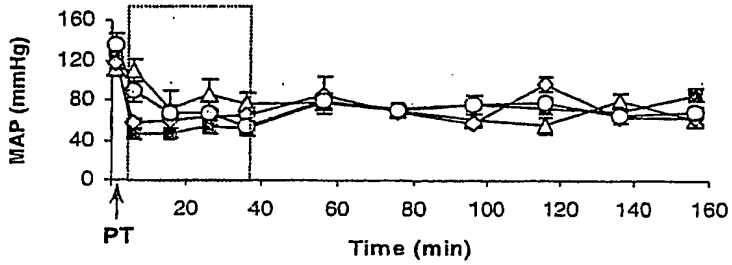

% AN/AAR
100%
80%
60%
40%
20%
0%
Saline Control
AL Soln
Ado-only
Lido-only

Figure 4

(A)


ISCHEMIA
REPERFUSION
Saline
AL soln
Adeno only
Lido only
Heart rate (bpm)
600
400
200
0
PT
20
40
60
80
100
120
140
160
Time (min)

(B)


MAP (mmHg)
160
120
80
40
0
PT
20
40
60
80
100
120
140
160
Time (min)

(C)

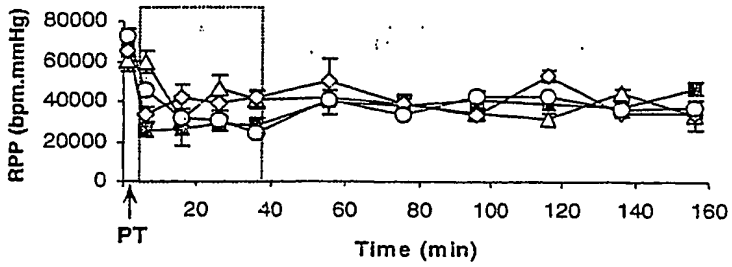
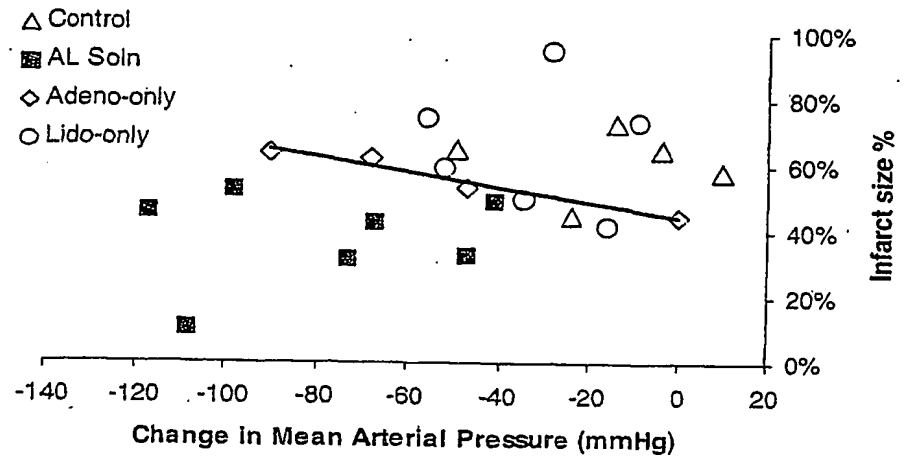

RPP (bpm.mmHg)
80000
60000
40000
20000
0
PT
20
40
60
80
100
120
140
160
Time (min)

Figure 5

(A)


Control
AL Soln
Adeno-only
Lido-only
100%
80%
60%
40%
20%
0%
Infarct size %
-140
-120
-100
-80
-60
-40
-20
0
20
Change in Mean Arterial Pressure (mmHg)

(B)

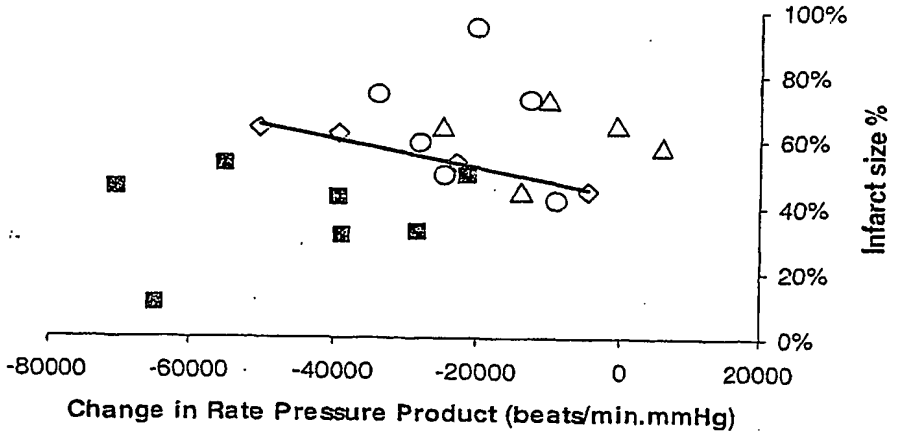

100%
80%
60%
40%
20%
0%
Infarct size %
-80000
-60000
-40000
-20000
0
20000
Change in Rate Pressure Product (beats/min.mmHg)

Figure 6

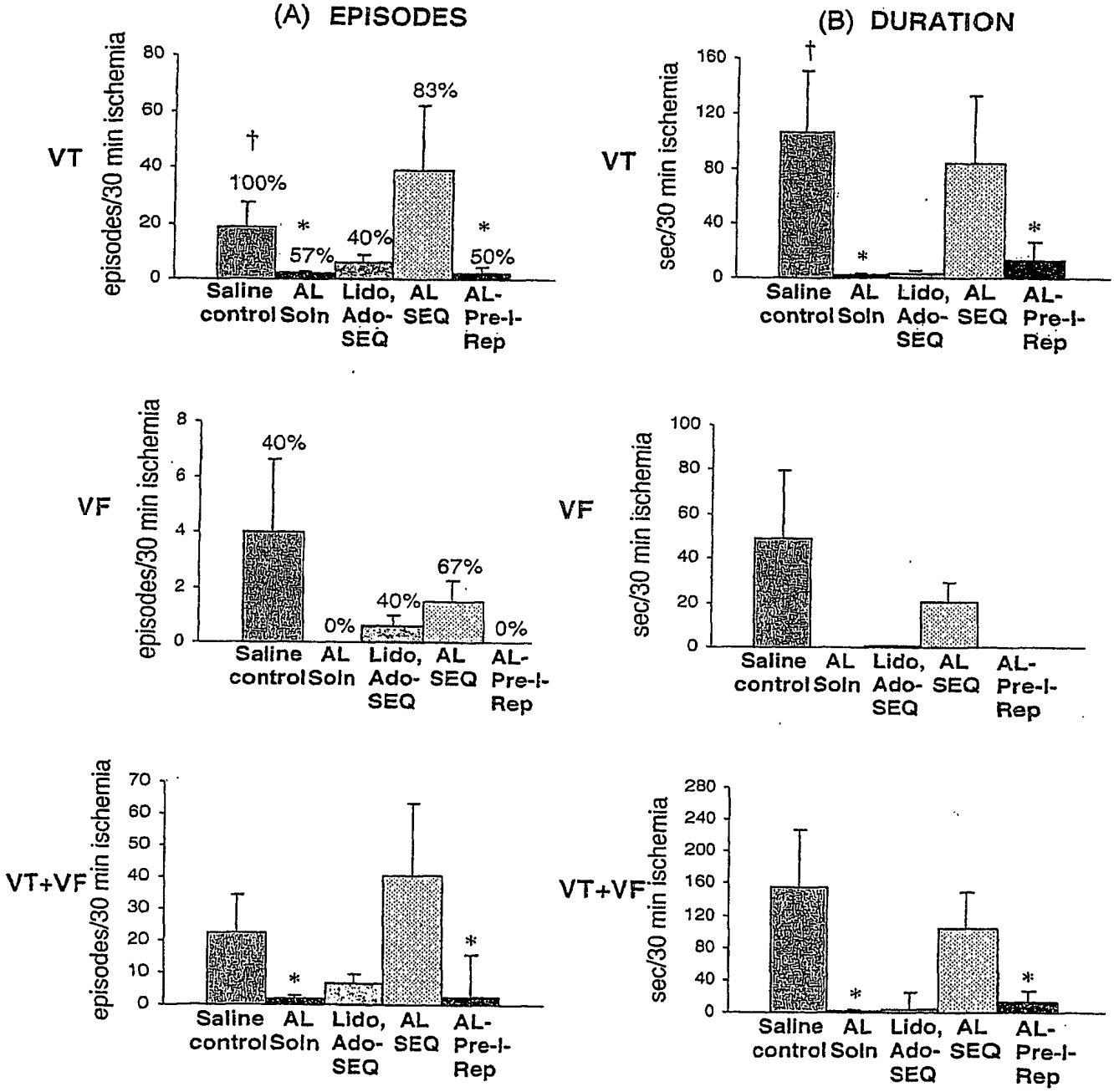
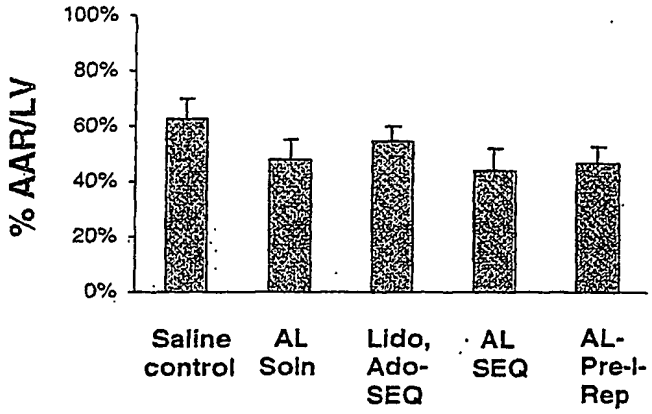
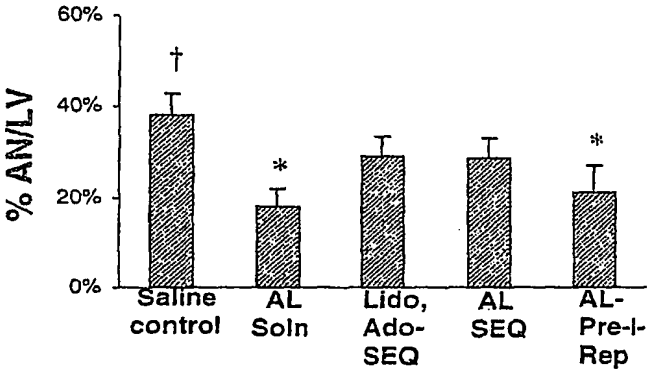

(A) EPISODES
(B) DURATION
VT
VF
VT+VF
episodes/30 min ischemia
sec/30 min ischemia
100%
57%
40%
83%
50%
40%
0%
40%
67%
0%
Saline control
AL Soln
Lido, Ado-SEQ
AL SEQ
AL-Pre-I-Rep

Figure 7

(A)


100%
80%
60%
40%
20%
0%
% AAR/LV
Saline control
AL Soln
Lido, Ado-SEQ
AL SEQ
AL-Pre-I-Rep

(B)


60%
40%
20%
0%
% AN/LV
†
*
*
Saline control
AL Soln
Lido, Ado-SEQ
AL SEQ
AL-Pre-I-Rep

(C)

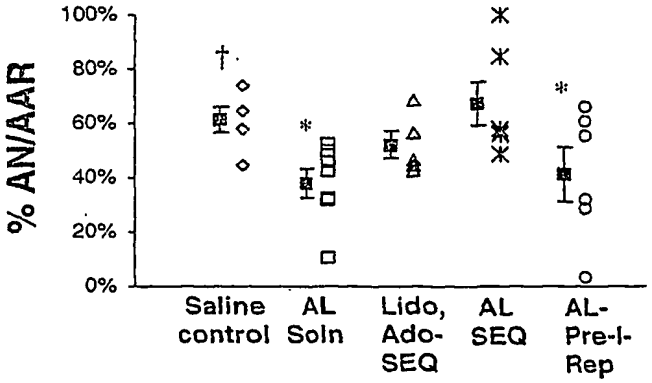

100%
80%
60%
40%
20%
0%
% AN/AAR
†
*
*
Saline control
AL Soln
Lido, Ado-SEQ
AL SEQ
AL-Pre-I-Rep

Figure 8

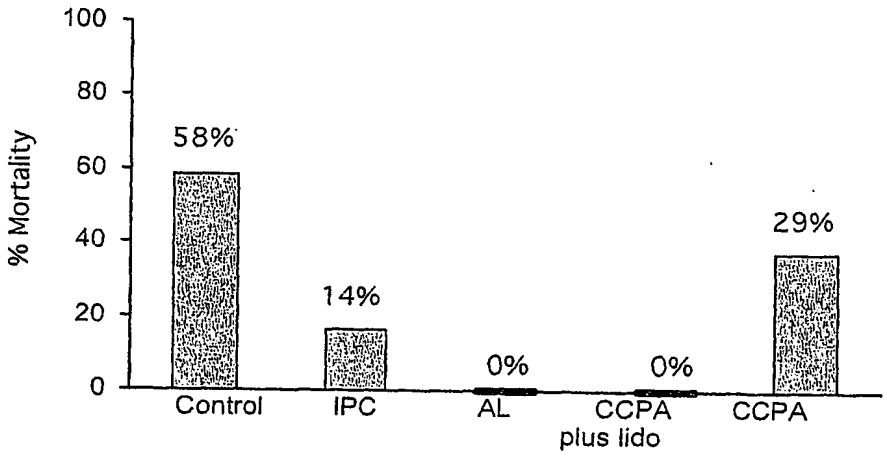

100
80
60
40
20
0
% Mortality
58%
14%
0%
0%
29%
Control
IPC
AL
CCPA plus lido
CCPA

Figure 9

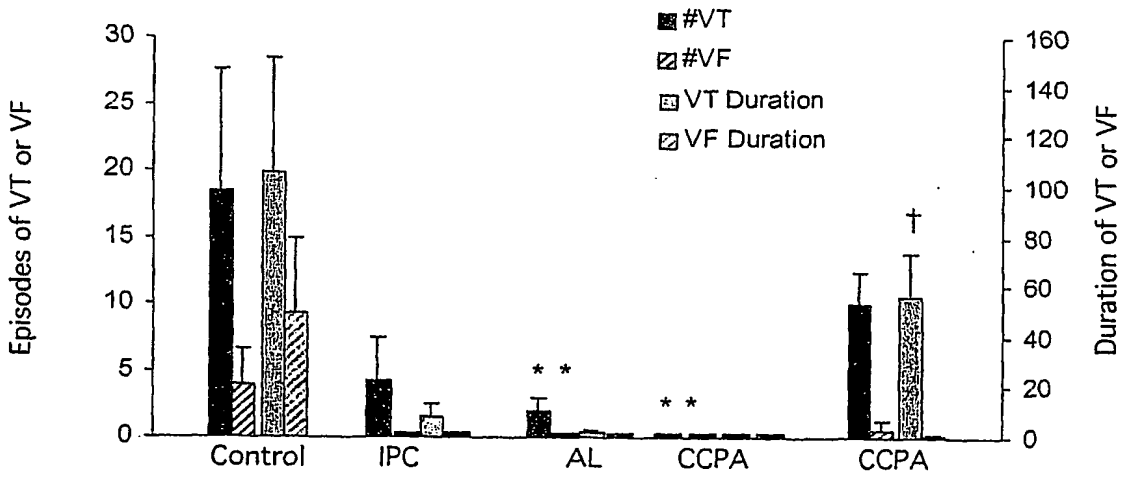

#VT
#VF
VT Duration
VF Duration
Episodes of VT or VF
Duration of VT or VF
30
25
20
15
10
5
0
160
140
120
100
80
60
40
20
0
* *
* *
†
Control
IPC
AL
CCPA
CCPA

Figure 10

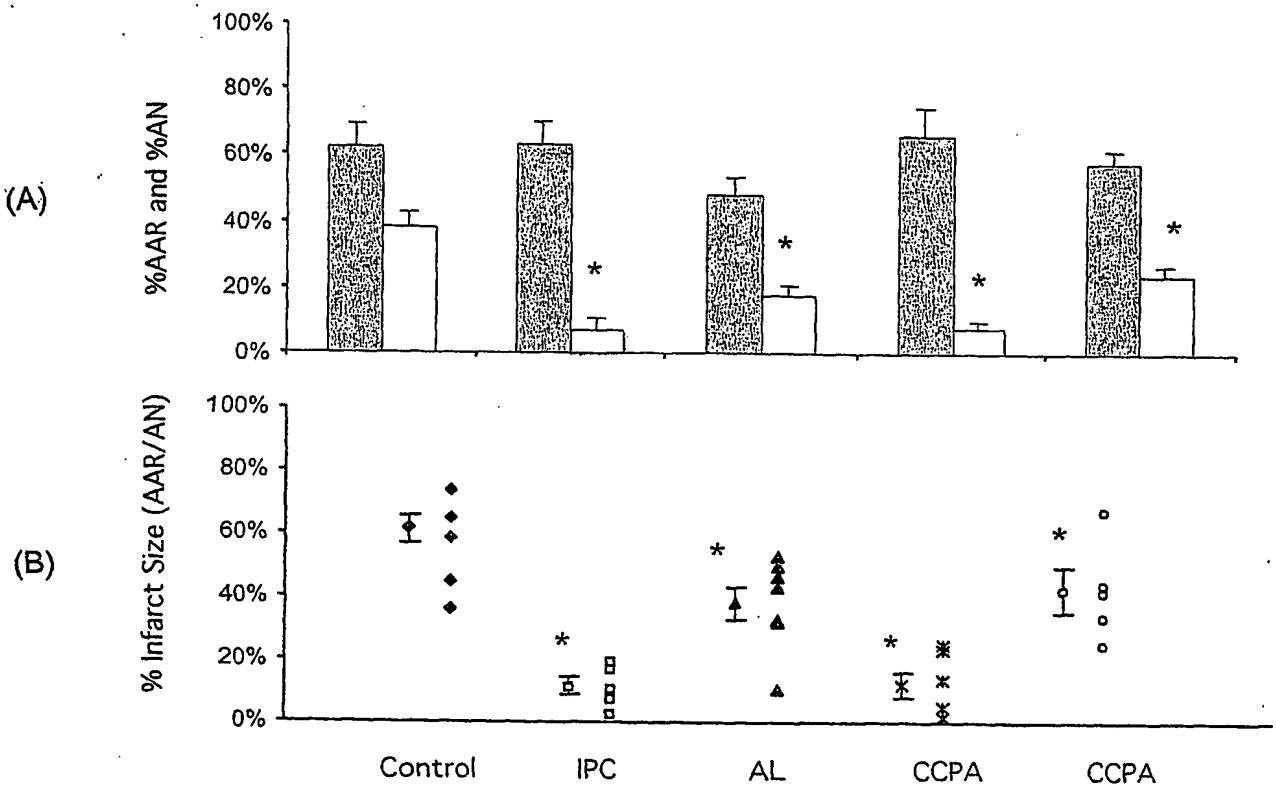

(A)
%AAR and %AN
100%
80%
60%
40%
20%
0%
(B)
% Infarct Size (AAR/AN)
100%
80%
60%
40%
20%
0%
Control
IPC
AL
CCPA
CCPA

Figure 11

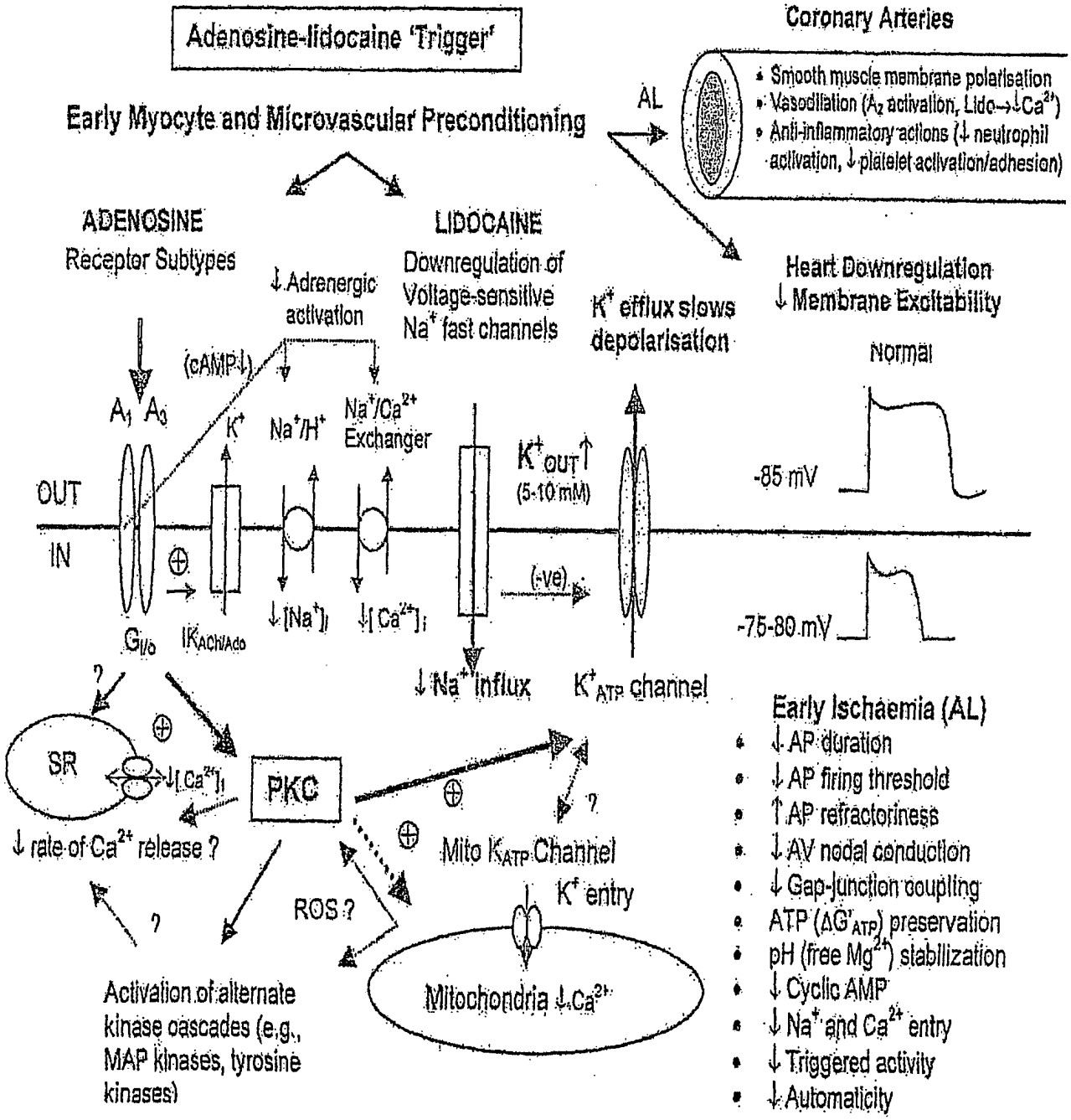

Adenosine-lidocaine 'Trigger'
Early Myocyte and Microvascular Preconditioning
ADENOSINE
Receptor Subtypes
LIDOCAINE
Downregulation of Voltage-sensitive Na+ fast channels
↓ Adrenergic activation
(cAMP↓)
A1 A3
K+
Na+/H+
Na+/Ca2+ Exchanger
OUT
IN
GI/o
IKACh/Ado
↓[Na+]i
↓[Ca2+]i
K+ efflux slows depolarisation
K+OUT↑ (5-10 mM)
(-ve)
↓ Na+ influx
K+ATP channel
Coronary Arteries
AL
Smooth muscle membrane polarisation
Vasodilation (A2 activation, Lido→↓Ca2+)
Anti-inflammatory actions (↓ neutrophil activation, ↓ platelet activation/adhesion)
Heart Downregulation
↓ Membrane Excitability
Normal
-85 mV
-75-80 mV
SR
↓[Ca2+]i
↓ rate of Ca2+ release ?
PKC
Mito KATP Channel
K+ entry
ROS ?
Mitochondria ↓Ca2+
Activation of alternate kinase cascades (e.g., MAP kinases, tyrosine kinases)
Early Ischaemia (AL)
↓ AP duration
↓ AP firing threshold
↑ AP refractoriness
↓ AV nodal conduction
↓ Gap-junction coupling
ATP (ΔG'ATP) preservation
pH (free Mg2+) stabilization
↓ Cyclic AMP
↓ Na+ and Ca2+ entry
↓ Triggered activity
↓ Automaticity

Figure 12

Table 2:

30 min Arrest Protocol	n	Time to Arrest (sec)	Cardioplegia flow (ml/min)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1			295	120/70	33	15.5
ARREST 5 min Induction		14 sec	10	ARREST	ARREST	ARREST	ARREST
@18 min (for 2 min)			3	ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			4.5	ARREST	ARREST	ARREST	ARREST
RECOVERY							
15 min				225	110/70	10.5	13.5
30 min				246	110/75	12	12
45 min				223	110/78	12.5	11

Figure 13

Table 3:

30 min Arrest Protocol	n	Time to Arrest (sec)	Cardioplegia flow (ml/min)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1			244	115/65	35.5	16
ARREST 5 min		23 sec	9	ARREST	ARREST	ARREST	ARREST
Induction @18 min (for 2 min)			7	ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			6	ARREST	ARREST	ARREST	ARREST
RECOVERY							
15 min				184	120/60	33	16.5
30 min				255	90/70	5	12
45 min				271	85/65	3	10

Figure 14

Table 4:

30 min Arrest Protocol	n	Time to Arrest (sec)	Cardioplegia flow (ml/min)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1			206	110/70	21	10
ARREST 5 min Induction		25 sec	5	ARREST	ARREST	ARREST	ARREST
@18 min (for 2 min)			4	ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			2.5	ARREST	ARREST	ARREST	ARREST
RECOVERY							
5 min				119	120/60	9	4
15 min				154	100/70	4	5
45 min				154	90/70	4	2

Figure 15

Table 5:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
E-ARREST (5 min)	1		350	120/70	40	16
ARREST 5 min Induction		1 min 45 sec	ARREST	ARREST	ARREST	ARREST
@15 min (for 2 min)			ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		39 min				
48 min			243	110/70	23	18
60 min			338	115/70	36	14
75 min			342 (98% return)	110/70 (>90% return)	37 (93% return)	16 (100% return)

Figure 16

Table 6:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		298	120/80	36	13.5
ARREST 5 min Induction		17 sec	ARREST	ARREST	ARREST	ARREST
@15 min (for 2 min)			ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		5 min 41 sec min				
15 min			Very	Weak	0	
32 min			281	90/80	15	13
45 min			263	120/80	39	10
60 min			275	120/80	33	12
65 min			300 (100% return)	120/80 (100% return)	28.5 (79% return)	12 (89% return)

Figure 17

Table 7:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		247	110/70	36	12
ARREST 5 min Induction		3 min 26 sec	ARREST	ARREST	ARREST	ARREST
@15 min (for 2 min)			ARREST	ARREST	ARREST	ARREST
@30 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		49 sec				
5 min			180	110/70	23.5	7.5
15 min (leak 5 ml/min)			223	110/90	27.5	8
30 min (leak 5 ml/min)			224 (91% return)	110/90 (>90% return)	27 (75% return)	8 (67% return)

Figure 18

Table 8:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST	2		290	130/70	47	15.5
(5 min)			270	120/70	42	15
ARREST		17 sec	ARREST	ARREST	ARREST	ARREST
5 min Induction		23 sec				
@15 min			ARREST	ARREST	ARREST	ARREST
(for 2 min)						
@30 min			ARREST	ARREST	ARREST	ARREST
(2 min)						
RECOVERY						
First Beat after		1 min 05 sec				
reperfusion		1 min 13 sec				
5 min			200	160/60	41	17
			234	120/80	34.5	17.5
15 min			200	130/70	28	12
			234	120/70	38	13.5
30 min			327	120/70	37.5	15
			242	110/60	37	12.5
45 min			319	120/70	37.5	14
			234	110/60	34	11.5
			(86-110%)	(>90% return)	(80% return)	(77-90%)

Figure 19

Table A:

L Only	Control	PAF	0.1 uM	1 uM	5 uM	10 uM
	3.26	20.74	14.14	14.44	15.28	19.42
	2.82	18.71	15.5	13.65	15.01	18.41
AVG	3.04	19.725	14.82	14.045	15.145	18.915
STD	0.311127	1.435427	0.961665	0.558614	0.190919	0.714178
SEM	0.22	1.015	0.68	0.395	0.135	0.505

ADO Only	Control	PAF	0.1 uM	1 uM	10 uM	100 uM
	2.82	16.78	9.78	5.94	0.13	1.76
	2.42	17.13	11.54	3.08	1.89	3.04
AVG	2.62	16.95	10.66	4.51	1.01	2.40
STD	0.28	0.25	1.24	2.02	1.24	0.91
SEM	0.20	0.18	0.88	1.43	0.88	0.64

AL	Control	PAF	1.00	2.00	3.00	4.00
	1.50	22.24	14.05	2.64	-3.30	0.97
	2.11	21.49	14.31	3.88	0.70	-3.61
AVG	1.81	21.87	14.18	3.26	-1.30	-1.32
STD	0.43	0.53	0.18	0.88	2.83	3.24
SEM	0.31	0.38	0.13	0.62	2.00	2.29

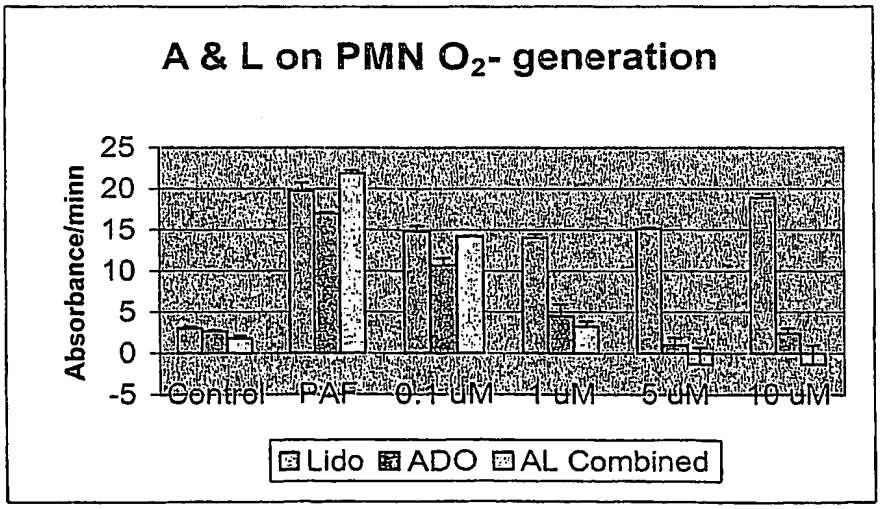


Figure 20

Table 9:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		360	120/80	43	18
ARREST 50 ml Induction		9 sec	ARREST	ARREST	ARREST	ARREST
			ARREST	ARREST	ARREST	ARREST
@38 min (2 min) RECOVERY			ARREST	ARREST	ARREST	ARREST
First Beat after reperfusion		2 min 15 sec				
15 min			320	120/70	8	11.6
30 min			335	120/70	21	11
60min			360 (100% return)	120/70 (>90% return)	23 (53% return)	11 (61% return)

Figure 21

Table 10:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		320	120/70	39	19
ARREST 50 ml Induction		9 sec	ARREST	ARREST	ARREST	ARREST
			ARREST	ARREST	ARREST	ARREST
NO 38 min PULSE RECOVERY			ARREST	ARREST	ARREST	ARREST
First Beat after reperfusion		12 min 32 sec			Leak 2.5 ml/min	
15 min			143	120/70	6	16
30 min			264	110/75	25.5	11.5
45 min			270 (84% return)	110/80 (>90% return)	28 72% return)	10.5 (55% return)

Figure 22

Table 11:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		350	120/70	41	15
ARREST 50 ml Induction		16 sec	ARREST	ARREST	ARREST	ARREST
CONTINUOUS			ARREST	ARREST	ARREST	ARREST
CONTINUOUS			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		1 min 35 sec				
15 min			280	110/70	39	13
30 min			320	120/70	38	14
60min			340 (97% return)	120/70 (>95% return)	36 (88% return)	13 (87% return)

Figure 23

Table 12:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		300	115/80	33	20
ARREST 50 ml Induction		18 sec	ARREST	ARREST	ARREST	ARREST
@15 min (2 min)			ARREST	ARREST	ARREST	ARREST
@38 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		2 min 52 sec				
15 min			200	115/85	8	7
30 min			220	110/70	10	7
60min			230 (77% return)	110/70 (>90% return)	7 (21% return)	7 (35% return)

Figure 24

PCT/AU2003/001711

Table 13:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		303	140/75	34	15
ARREST 50 ml Induction		13 sec	ARREST	ARREST	ARREST	ARREST
@15 min (2 min)			ARREST	ARREST	ARREST	ARREST
@28 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		4 min AF at 12 min				
15 min			236	140/75	29.5	12.5
30 min			248	125/80	26	11.5
45min			229 (76% return)	125/80 (>90% return)	20 (59% return)	10.5 (70% return)

Figure 25

Table 14:

30 min Arrest Protocol	n	Time to Arrest and first beat (sec)	Heart Rate (bpm)	Systolic/ diastolic Pressure (mmHg)	Aortic Flow (ml/min)	Coronary Flow (ml/min)
PRE-ARREST (5 min)	1		255	140/70	32	15
ARREST 50 ml Induction		8 sec	ARREST	ARREST	ARREST	ARREST
@15 min (2 min)			ARREST	ARREST	ARREST	ARREST
@28 min (2 min)			ARREST	ARREST	ARREST	ARREST
RECOVERY						
First Beat after reperfusion		12 min 30 sec AF at 15 min				
15 min			204	160/70	30	22
30 min			220	140/75	21	16
45 min			229 (90% return)	140/80 (>95% return)	18 (56% return)	17 (113% return)

Figure 26

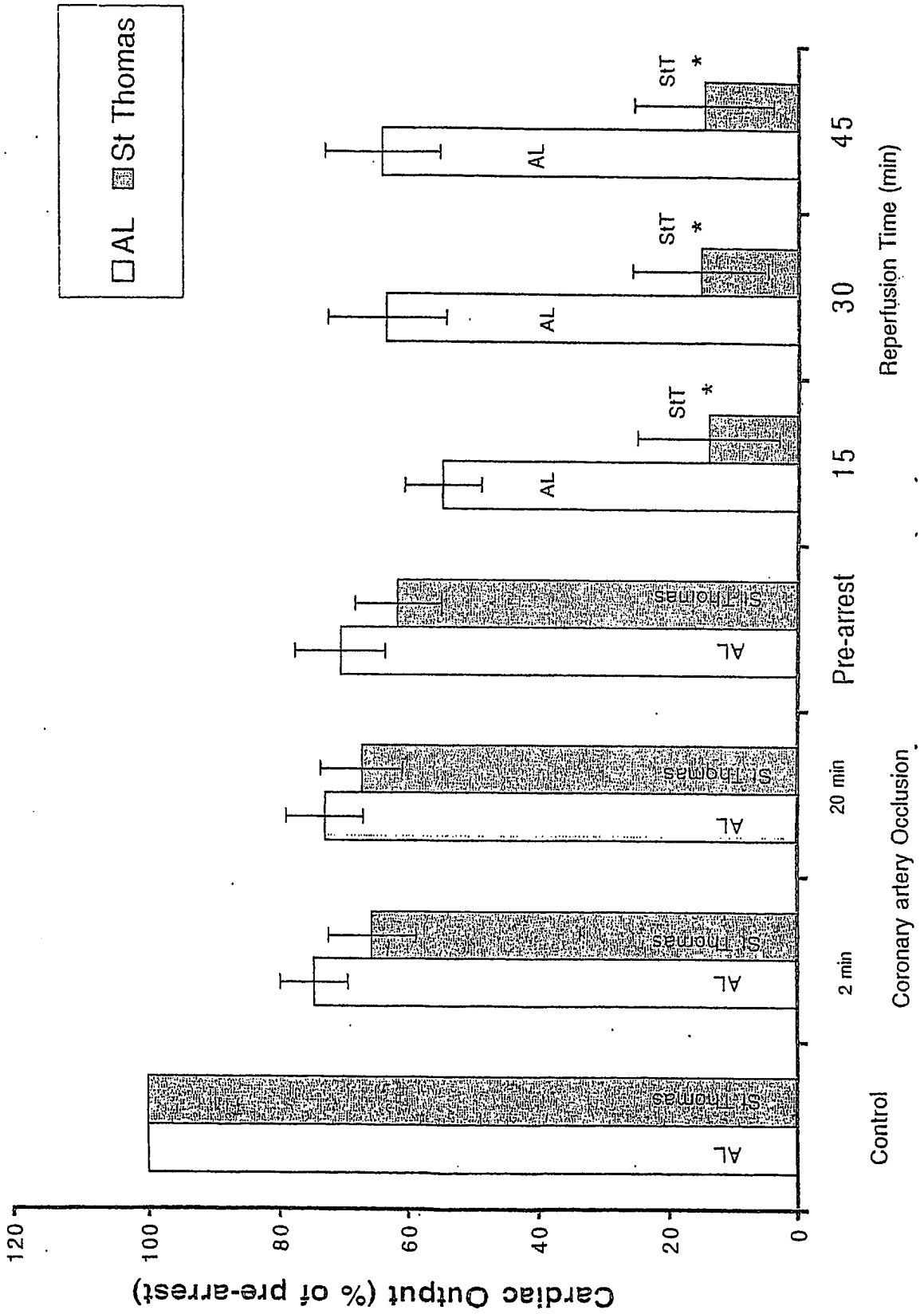

AL
St Thomas
Cardiac Output (% of pre-arrest)
120
100
80
60
40
20
0
Control
2 min
20 min
Pre-arrest
15
30
45
Coronary artery Occlusion
Reperfusion Time (min)
StT
*

Figure 27

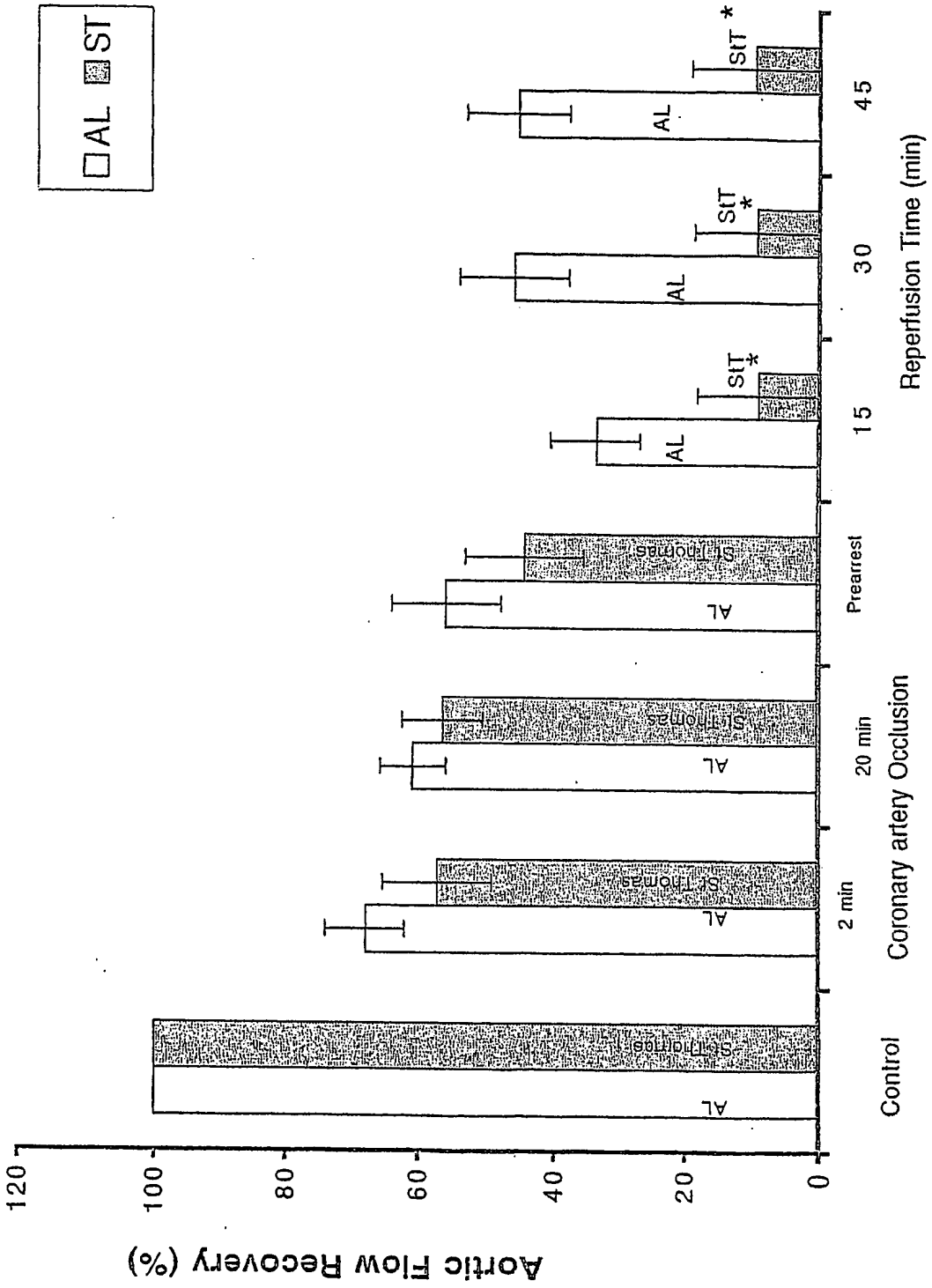

AL
ST
Aortic Flow Recovery (%)
120
100
80
60
40
20
0
Control
2 min
20 min
Prearrest
15
30
45
Coronary artery Occlusion
Reperfusion Time (min)
*

Figure 28

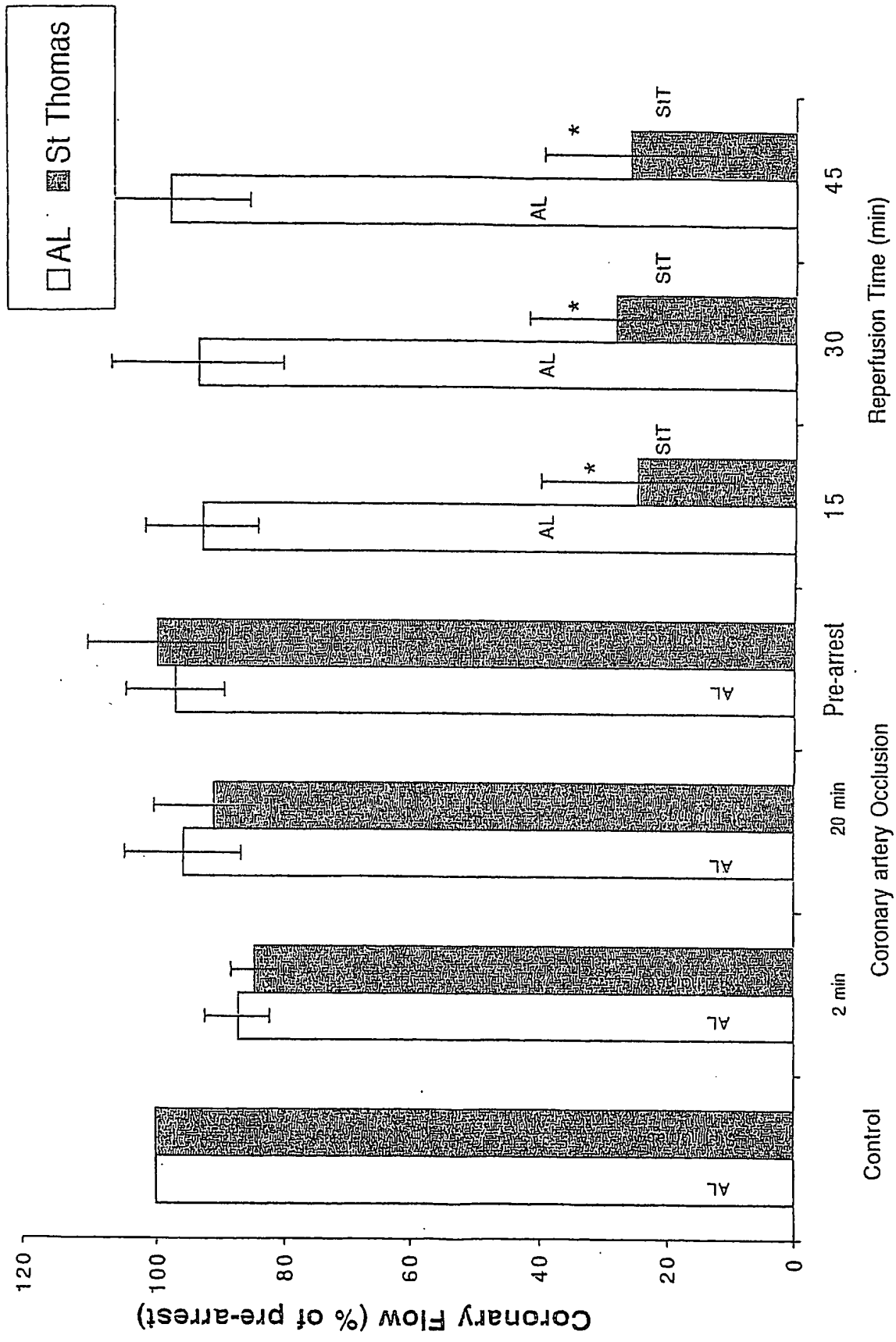

AL
St Thomas
Coronary Flow (% of pre-arrest)
120
100
80
60
40
20
0
Control
2 min
20 min
Pre-arrest
15
30
45
Reperfusion Time (min)
Coronary artery Occlusion
AL
StT
*

Figure 29

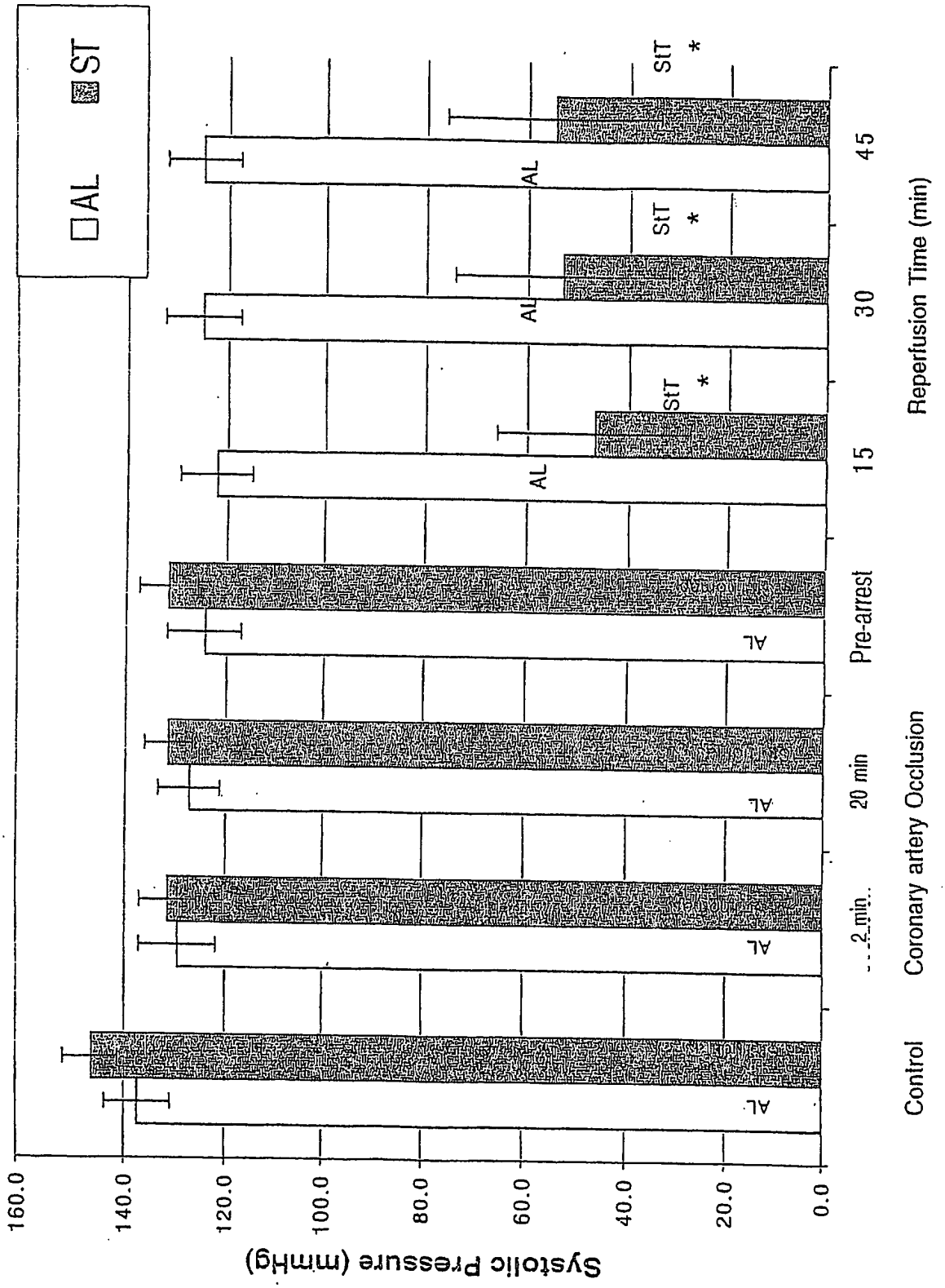

AL
ST
Systolic Pressure (mmHg)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Control
2 min
20 min
Pre-arrest
15
30
45
Coronary artery Occlusion
Reperfusion Time (min)
*

Figure 30

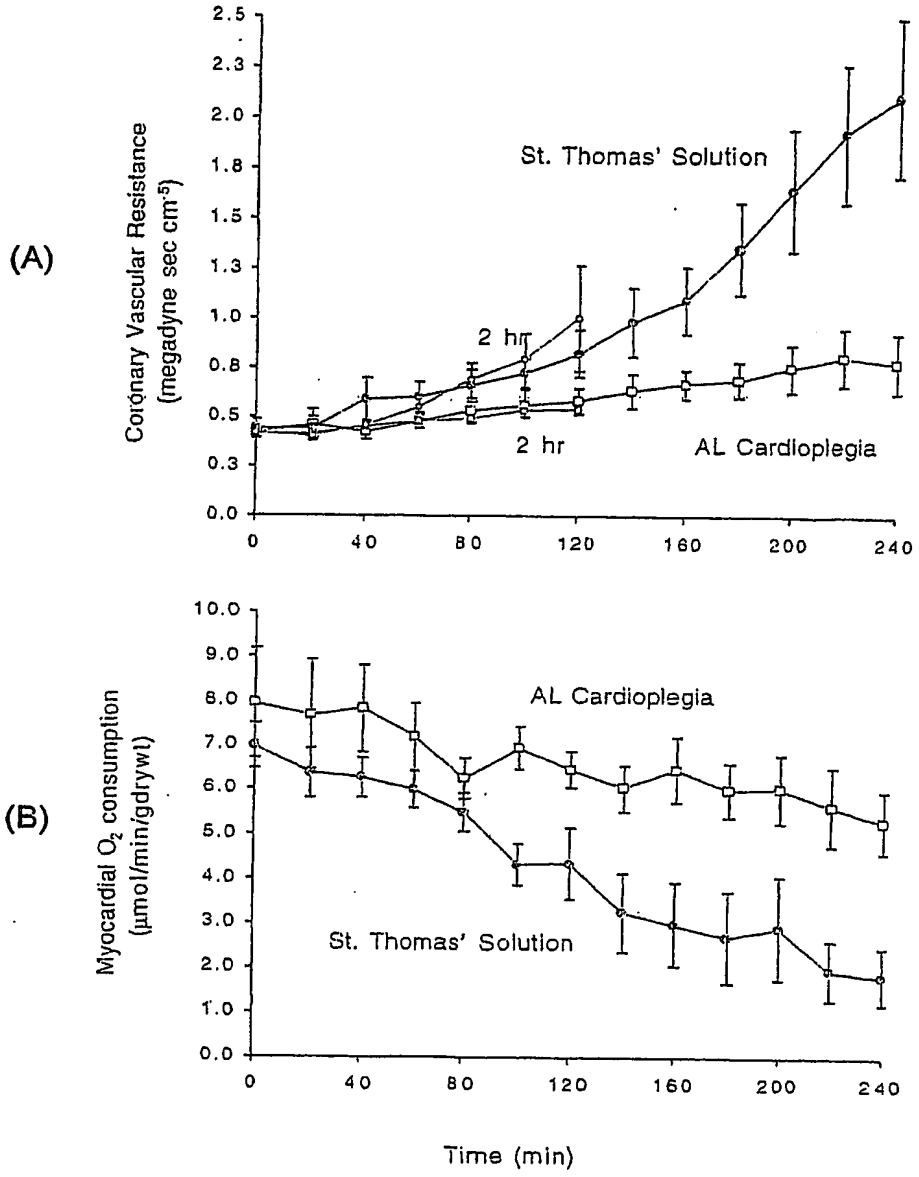

(A)
Coronary Vascular Resistance (megadyne sec cm-5)
St. Thomas' Solution
2 hr
2 hr
AL Cardioplegia
(B)
Myocardial O2 consumption (µmol/min/gdrywt)
AL Cardioplegia
St. Thomas' Solution
Time (min)

Figure 31

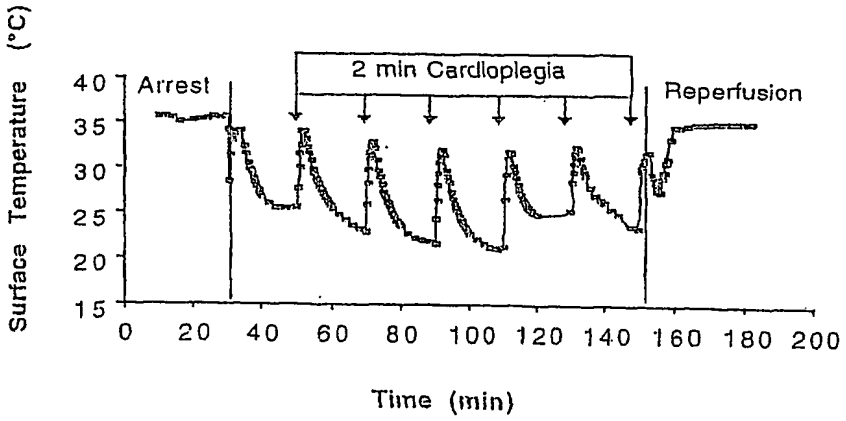

Surface Temperature (°C)
40
35
30
25
20
15
Arrest
2 min Cardioplegia
Reperfusion
0
20
40
60
80
100
120
140
160
180
200
Time (min)

Figure 32

Table 15:

Treatment	No of hearts	Membrane potential (This study)	Published Values	References
Normal[5] Pre-Arrest Controls	6	-83 ± 2 mV[3]	-84 ± 2 mV[2]	Masuda, T, Dobson, GP and , RL (1990) J. Biol. Chem. 265 (33) 20321-34
			-84[4] ± 1 mV[2, 4]	Kleber AG (1983) Circ Res. 52 (4) 442-50
St. Thomas Solution #2	6	-48 ± 3 mV[3]	~ -50 mV[2]	Chambers DJ (1999) Curr Opin Cardiol 14 (6) 495-500
16 mM KCl (8°C)	7		-50 mV[2]	Snabaitis, AK, Shattock, MJ, and Chambers, DJ (1997) Circulation 96 (9) 3148-56
16 mM KCl	6		-49.5 ±1 mV[2, 4]	Kleber AG (1983) Circ Res. 52 (4) 442-50
AL Cardioplegia	6	-83 ± 1 mV[3]		

[1] Adenosine (200 uM) and lidocaine (500 uM) was in 10 mM glucose-containing Krebs-Henseleit solution pH 7.4
[2] Measured using 3M KCL microelectrodes
[3] Membrane potential was calculated from the Nernstian distribution of K^+ ion between intra- and extra-cellular compartments of left ventricle as described in Masuda, Dobson and Veech (1990) The Donnan Near-Equilibrium system of heart. J. Biol. Chem 265 (33) 20321-34
[4] isolated perfused guinea pig heart.
[5] Healthy (non-injured) pre-arrest perfused isolated rat hearts in the working mode

Table 16:

2 hour Arrest Protocol	Treatment	n	Heart Rate (bpm)	Aortic Flow (ml/min)	Coronary Flow (ml/min)	Rate Pressure Product (mmHg/min)	O_2 Consumption (µmol/min/g dry weight)⊗
5 min Pre-Arrest	AL	7	259 ± 20	33.2 ± 2.7	17.1 ± 1.8	30998 ± 2046	45.3 ± 4.30
	St.T	8	259 ± 13	34.5 ± 2.1	18.0 ± 1.3	31329 ± 1720	46.1 ± 2.60
15 min Recovery	AL	7	215 ± 24	17.0 ± 3.6	15.3 ± 1.4	24934 ± 2506	53.6 ± 7.2
	St.T	8	108 ± 32*	5.9 ± 3.8	7.3 ± 2.9*	9514 ± 3737*	16.4 ± 6.6
30 min Recovery	AL	7	248 ± 22	25.5 ± 2.3	15.4 ± 1.6	28722 ± 2149	51.6 ± 5.6
	St.T	8	148 ± 47*	9.4 ± 7.0*	8.93 ± 4.6	12498 ± 6863*	18.9 ± 7.5
60 min Recovery	AL	7	245 ± 26	24.6 ± 2.7	13.8 ± 1.7	27958 ± 2457	49.8 ± 6.5
	St.T	8	147 ± 45*	7.7 ± 5.9*	8.35 ± 4.4	11808 ± 6533*	18.8 ± 7.8

* denotes significance between treatment groups $p<0.05$ ** denotes significance between treatment groups $p<0.001$

⊗To convert from µmol/min/g dry weight to wet weight divide by 7.46 for both pre-arrest groups, and by 9.26 (AL hearts) and 7.41 (St. Thomas' hearts) in recovery

Figure 34

Table 17:

4 hour Arrest Protocol	Treatment	n	Heart Rate (bpm)	Aortic Flow (ml/min)	Coronary Flow (ml/min)	Rate Pressure Product (mmHg/min)	O_2 Consumption (µmol/min/g dry weight)®
5 min Pre-Arrest	AL	9	275 ±13	36.5 ± 1.7	16.28 ± 1.0	32338 ± 1084	50.3 ± 3.4
	St.T	7	259 ±13	41.2 ± 4.2	16.03 ± 1.3	31508 ± 1672	57.2 ± 1.8
15 min Recovery	AL	9	229 ± 16	19.8 ± 3.6	13.9 ± 1.5	25327 ± 1555	55.0 ± 6.4
	St.T	7	67 ± 28**	2.7*	2.3**	3815 ± 3040**	5.7 ± 5.1**
30 min Recovery	AL	9	239 ± 19	24.6 ± 2.9	11.5 ± 1.0	26684 ± 1669	45.7 ± 4.1
	St.T	7	79 ± 26**	2.4**	2.9*	4137 ± 3170 **	6.1 ± 5.5**
60 min Recovery	AL	9	249 ± 17	25.6 ± 3.3	11.4 ± 1.3	27569 ± 1577	44.6 ± 4.8
	St.T	7	83 ± 30**	2.1**	2.6*	4359 ± 3527**	7.1 ± 6.5**

* denotes significance between treatment groups $p<0.05$ ** denotes significance between treatment groups $p<0.001$
# Only 1 of 7 St Thomas' hearts had measurable aortic and coronary flows and only the mean values are presented.
® To convert from µmol/min/g dry weight to wet weight divide by 7.46 for both pre-arrest groups, and by 9.26 (AL hearts) and 7.41 (St. Thomas' hearts) in recovery

Figure 35